

Imaging of the Venus night side with the Venus Monitoring Camera onboard Venus Express

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Radiation from the lower atmosphere and the surface of Venus escapes to space through the spectral “transparency” windows. These emissions measured from orbit can provide valuable information about the distribution of surface temperature and emissivity as well as about variability of the cloud opacity. The Venus Monitoring Camera (VMC) onboard Venus Express has two near-IR filters centered at the $1\mu\text{m}$ transparency “window”. The filter at 1010 nm is designated for surface imaging. Intensity in the channel mainly depends on the surface temperature that depends on topography and cloud opacity. The second filter at 965 nm is centered at the water vapour band and will monitor spatial distribution of atmospheric water in the lower scale height. Brightness contrasts on the night side seen by the VMC near-IR filters are about 8%. The nightside imaging in the first 100 orbits will cover Ishtar Terra including Maxwell Montes, Beta, Foebe, and Themis Regios, Hinemoa and Kawelu Planitia. These observations will be used to identify stationary brightness features, to correlate them with topographic data and with geology, and to derive cloud opacity. The paper will present the first results of Venus night side imaging by VMC.